

Amendments to the Claims:

1. (currently amended) A communication system comprising:
a single forward channel transmitter base station;
at least one wireless communications device having an edge and dimensions similar to the length, width, and thickness of a credit card, the at least one device having components embedded therewithin, including:
a receiver;
a man machine interface;
a processor;
a power supply; and
a thin flexible sheet having an antenna embedded therewithin and being pivotally connected to the edge of the at least one device, the sheet being pivotable substantially adjacent the edge to alternate between folded and unfolded positions, the sheet being sized and configured to cover the man machine interface to protect the interface from an environment and generally coplanar with the at least one device when in the folded position, the sheet being generally angularly displaced from the at least one device when in the unfolded position, wherein the sheet is deployable to the unfolded position to facilitate communication between the at least one wireless communications device and the base station.
2. (Original) The communication system of Claim 1, wherein the base station comprises a high temperature superconductivity receiver.
3. (Cancelled)
4. (Previously Presented) The communication system of Claim 1, wherein the at least one wireless communications device further comprising a transmitter.
5. (Previously Presented) The communication system of Claim 1, wherein the receiver comprises a frequency shift keying receiver.
6. (Previously Presented) The communication system of Claim 1, wherein the receiver comprises a direct sequence spread spectrum modulator.
7. (Original) The communication system of Claim 6, wherein the direct sequence spread spectrum modulator comprises differential phase shift keying.

8. (Previously Presented) The communication system of Claim 1, wherein the man machine interface comprises a display.

9. (Original) The communication system of Claim 8, wherein the display is a thin polymer emissive display.

10. (Original) The communication system of Claim 8, wherein the display is capable of displaying graphical and textual information.

11. (Original) The communication system of Claim 8, wherein the man machine interface further comprises at least one pushbutton.

12. (Previously Presented) The communication system of Claim 1, wherein the power supply comprises a primary battery.

13. (Original) The communication system of Claim 12, wherein the primary battery is a lithium non-rechargeable battery.

14. (Previously Presented) The communication system of Claim 1, wherein the power supply comprises a secondary battery.

15. (Original) The communication system of Claim 14, wherein the secondary battery is a lithium rechargeable battery.

16. (Original) The communication system of Claim 15, wherein the power supply further comprises:

- a) a constant current source charger; and
- b) a low dropout analog regulator.

17. (Previously Presented) The communication system of Claim 1, wherein the antenna is a monopole antenna.

18. (Previously Presented) The communication system of Claim 1, wherein the antenna is a dipole antenna.

19. (Previously Presented) The communication system of Claim 1, wherein the antenna is a patch antenna.

20. (Previously Presented) The communication system of Claim 1, wherein the system is a voice response architecture and further comprises:

- a) a microphone; and
- b) an integrated broadband processor.

21. (Previously Presented) The communication system of Claim 1, wherein the at least one wireless communications device is structurally flexible.

22. (Previously Presented) The communication system of Claim 1, wherein the at least one wireless communications device and the base station can communicate within in a range of about 30 kilometers.

23. (Previously Presented) The communication system of Claim 1, wherein the single high powered forward channel transmitter base station is located in an aircraft.

24. (Previously Presented) The communication system of Claim 1, wherein the at least one wireless communications device receives its location from a Global Positioning System and uploads the location to the base station.

25. (Previously Presented) The communication system of Claim 1, wherein the at least one wireless communications device communicates with the single forward channel transmitter base station using an interrogation protocol.

26. (Previously Presented) The communication system of claim 1, wherein the at least one wireless communications device has a thickness of about .79mm

27. (Previously Presented) The communication system of Claim 1, wherein the at least one wireless communication device has a length of about 9.6 cm and width of about 6.4 cm.

28. (Previously Presented) The communications system of Claim 23, wherein the aircraft is a remote controlled drone flying within 30 miles of the at least one wireless communications device.

29. (currently amended) A communications device comprising a flexible smart card having a length, width, and thickness similar to the dimensions of a credit card, said smart card having components embedded within including a receiver, an antenna, a man machine interface, a processor, and a power supply, wherein said device communicates with a base station, and wherein said antenna comprises a monopole antenna embedded on a thin flexible sheet, flexibility of said card being equal to about flexibility of said sheet, said sheet being hinged to and pivotable about an edge of said smart card such that said monopole antenna may be deployed by pivoting said sheet about said edge.

30. (Previously Presented) The device of Claim 29, further comprising a transmitter embedded within said smart card.

31. (Previously Presented) The device of Claim 29, said receiver utilizing frequency shift keying (FSK).

32. (Previously Presented) The device of Claim 30, said transmitter utilizing a direct sequence spread spectrum (DSSS) differential phase shift keying (DPSK) modulator.

33. (Previously Presented) The device of Claim 29, said man machine interface comprising a display capable of displaying graphical and textual information.

34. (Previously Presented) The device of Claim 33, said display comprising a thin polymer emissive display.

35. (Previously Presented) The device of Claim 29, said man machine interface comprising at least one pushbutton.

36. (Previously Presented) The device of Claim 29, said power supply comprising a primary battery.

37. (Previously Presented) The device of Claim 36, said primary battery comprising a lithium non-rechargeable battery.

38. (Previously Presented) The device of Claim 36, said power supply further comprising a secondary battery.

39. (Previously Presented) The device of Claim 38, said secondary battery comprising a lithium rechargeable battery.

40. (Previously Presented) The device of Claim 29, said power supply further comprising a constant current source charger and low dropout analog regulator.

41. (Previously Presented) The device of Claim 29, said device having a length of about 9.6 cm, a width of about 6.4 cm, and a thickness of about .79 cm.

42. (Cancelled).

43. (Cancelled).

44. (Previously Presented) The device of Claim 29, said antenna comprising a patch antenna affixed to at least one of a frontside and backside of said smart card.

45. (Previously Presented) The device of Claim 29, said device further comprising a voice response feature comprising a MEMS microphone and integrated broadband processor.

46. (Previously Presented) The device of Claim 29, wherein said device receives its location from a Global Positioning System and uploads the location to a base station.

47. (Previously Presented) A credit card sized wireless communications device comprising:

- a smart card produced from a flexible die having a thickness of about .79 mm., a length of about 9.6 cm, and width of about 6.4 cm;

- a processor integrated within said smart card which utilizes a forward and reverse channel, wherein said processor processes forward channel information for display and generation of reverse channel information, wherein the forward channel utilizes simple repetition to minimize power consumption and high forward channel carrier interference, and wherein the reverse channel utilizes forward error correcting code;

- a transceiver mounted within said smart card comprising,

- a receiver embedded in an application specific integrated circuit (ASIC) device which utilizes single conversion frequency shift keying (FSK) for receiving transmitted information, and

- a transmitter which utilizes direct sequence spread spectrum (DSSS) differential phase shift keying (DPSK) modulation for rejecting interference and enhancing reverse channel link range;

- a man machine interface integrated into a front side of said smart card including,

- a one-quarter VGA size dot matrix thin polymer emissive display capable of displaying a combination of text and graphics, and

- at least one push button to perform functions;

- a contact pad integrated on an exterior side of said smart card for communicating to an integrated processor of a separate base station via a bi-

directional serial bit communications link, and for providing power and an electrical ground from an outside source;

a power supply attached within said smart card composed of a high energy density battery having a planar shape, a constant current source charger, and a low drop out analog regulator; and

an antenna embedded into said smart card;

wherein said at least one communication device communicates, via a reservation "Slotted Aloha" interrogation protocol, with a high-powered forward channel transmitter base station having a high temperature superconductivity receiver.

48. (Previously Presented) The communications device according to Claim 47, said battery comprising at least one of a single lithium polymer secondary chemistry rechargeable battery, a primary non-rechargeable thin Li battery, and a secondary rechargeable thin Li polymer battery.

49. (Previously Presented) The communications device according to Claim 47, further comprising a voice response feature comprising a MEMS microphone for transmitting voice information, wherein voice traffic is permitted on the reverse channel, wherein said processor has integrated baseband capabilities capable of processing vocodes, forward error correction codes and frames.

50. (Previously Presented) The communications device according to Claim 47, said antenna comprising a monopole antenna embedded on a thin flexible sheet having a length of about 9.6 cm and width of about 6.4 cm, said sheet hinged to an edge of said smart card such that said monopole antenna may be deployed by unfolding said sheet from said platform.

51. (Previously Presented) The communications device according to Claim 47, said antenna comprising a center fed dipole antenna having a first L-shaped portion and second L-shaped portion, each portion having a long and short leg, said first L-shaped portion embedded on a thin flexible sheet having a length of about 9.6 cm and width of about 6.4 cm, said sheet hinged to an edge of said smart card such that said first L-shaped portion may be deployed by unfolding said sheet from said smart card, said second L-shaped portion

embedded within said smart card, said short legs of said L-shaped portions configured in a parallel manner about hinged edge of said smart card and flexible sheet.

52. (Previously Presented) The communications device according to Claim 47, said antenna comprising a patch antenna affixed to at least one of a frontside and backside of said smart card.

53. (Previously Presented) The communications device according to Claim 47, said smart card being structurally flexible.

54. (Previously Presented) The communications device of Claim 47, said communications device being able to communicate with a base station within a range of about up to 30 kilometers.

55. (Previously Presented) The communication system of Claim 47, wherein the communications device receives its location from a Global Positioning System and uploads the location to a base station.

56. (Previously Presented) At least one credit card sized wireless communications device in combination with a single high powered forward channel transmitter base station having a high temperature superconductivity receiver, said at least one credit card sized wireless communications device comprising:

a smart card produced from a flexible die having a thickness of about .79 mm, a length of about 9.6 cm, and a width of about 6.4 cm;

a processor integrated within said smart card which utilizes a forward and reverse channel, wherein said processor processes forward channel information for display and generation of reverse channel information, wherein the forward channel utilizes simple repetition to minimize power consumption and high forward channel carrier interference, and wherein the reverse channel utilizes forward error correcting code;

a transceiver mounted within said smart card comprising,

a receiver embedded in an application specific integrated circuit (ASIC) device which utilizes single conversion frequency shift keying (FSK) for receiving transmitted information, and

a transmitter which utilizes direct sequence spread spectrum (DSSS) differential phase shift keying (DPSK) modulation for rejecting interference and enhancing reverse channel link range;
a man machine interface integrated into a front side of said smart card including,

a one-quarter VGA size dot matrix thin polymer emissive display capable of displaying a combination of text and graphics, and

at least one push button to perform functions;

a contact pad integrated on an exterior side of said smart card for communicating to an integrated processor of a separate base station via a bi-directional serial bit communications link, and for providing power and an electrical ground from an outside source;

a power supply attached within said smart card composed of a high energy density battery having a planar shape, a constant current source charger, and a low drop out analog regulator; and

an antenna embedded into said smart card;

wherein said at least one communication device communicates, via a reservation "Slotted Aloha" interrogation protocol, with a high-powered forward channel transmitter base station having a high temperature superconductivity receiver.

57. (Previously Presented) The communications device according to Claim 56, said battery comprising at least one of a single lithium polymer secondary chemistry rechargeable battery, a primary non-rechargeable thin Li battery, and a secondary rechargeable thin Li polymer battery.

58. (Previously Presented) The communications device according to Claim 56, further comprising a voice response feature comprising a MEMS microphone for transmitting voice information, wherein voice traffic is permitted on the reverse channel, wherein said processor has integrated baseband capabilities capable of processing vocodes, forward error correction codes and frames.

59. (Previously Presented) The communications device according to Claim 56, said antenna comprising a monopole antenna embedded on a flexible sheet having a length of

about 9.6 cm and width of about 6.4 cm, said sheet hinged to an edge of said smart card such that said monopole antenna may be deployed by unfolding said sheet from said platform.

60. (Previously Presented) The communications device according to Claim 56 said antenna comprising a center fed dipole antenna having a first L-shaped portion and second L-shaped portion, each portion having a long and short leg, said first L-shaped portion embedded on a flexible sheet having a length of about 9.6 cm and width of about 6.4 cm, said sheet hinged to an edge of said smart card such that said first L-shaped portion may be deployed by unfolding said sheet from said smart card, said second L-shaped portion embedded within said smart card, said short legs of said L-shaped portions configured in a parallel manner about hinged edge of said smart card and flexible sheet.

61. (Previously Presented) The communications device according to Claim 56, said antenna comprising a patch antenna affixed to at least one of a frontside and backside of said smart card.

62. (Previously Presented) The communications device according to Claim 56, said smart card being structurally flexible.

63. (Previously Presented) The communications device of Claim 56, said communications device being able to communicate with said base station within in a range of about up to 30 kilometers.

64. (Previously Presented) The communication system of Claim 56, wherein the communications device receives its location from a Global Positioning System and uploads the location to a base station.

65. (Previously Presented) The communication system of Claim 56 wherein said single high powered forward channel transmitter base station is located in an aircraft.

66. (Previously Presented) The communications system of Claim 65, wherein the aircraft is a remote controlled drone flying within 30 miles of said at least one credit card sized wireless communications device.

67. (currently amended) A communications device comprising a flexible smart card having a length, width, and thickness similar to the dimensions of a credit card, said smart card having components embedded within including a receiver, an antenna, a man machine interface, a processor, and a power supply, wherein said device communicates with

a base station, and wherein said antenna comprises a center fed dipole antenna having a first L-shaped portion and second L-shaped portion, each portion having a long and short leg, said first L-shaped portion embedded on a thin flexible sheet having a length of about 9.6 cm and width of about 6.4 cm, said sheet hinged to an edge of said smart card such that said first L-shaped portion may be deployed by unfolding said sheet from said smart card, said second L-shaped portion embedded within said smart card, said short legs of said L-shaped portions configured in a parallel manner about the hinged edge of said smart card and said sheet.

68. (Previously Presented) A wireless communications device communicable with a base station, the device comprising:

a device body having an edge and dimensions similar to the length, width, and thickness of a credit card, the device body having components embedded within, including:

a receiver;
a man machine interface;
a processor;
a power supply; and

a thin flexible sheet having an antenna embedded therewithin and being pivotally connected to the edge of the device body, the sheet being pivotable substantially adjacent the edge to alternate between folded and unfolded positions, the sheet being sized and configured to cover the man machine interface to protect the interface from an environment and generally coplanar with the device body when in the folded position, the sheet being generally angularly displaced from the device body when in the unfolded position, wherein the sheet is deployable to the unfolded position to facilitate communication between the device and the base station.

69. (Withdrawn) A communications device communicable with a base station which is capable of transmitting a plurality of interrogation signals, each interrogation signal being transmitted at periodic intervals, the device comprising:

a device body having dimensions similar to the length, width, and thickness of a credit card, the device body having components embedded within, including:
a credit an antenna capable of receiving the interrogation signals;

a receiver in communication with the antenna;

a processor in communication with the antenna and the receiver, the processor being awoken at an expiration of a sleep time for each of the transmitted interrogation signal to process the received interrogation signal;

a resistor capacitor oscillator in communication with the processor, the resistor capacitor oscillator defining the sleep time, a subsequent sleep time being adjusted based on an expiration of a prior sleep time and receipt of the interrogation signal received after expiration of the prior sleep time; and

a man machine interface in communication with the processor.

70. (New) The device of Claim 29 wherein said antenna is pivotable about said edge between an unfolded position and a folded position, and said card is conformable to said sheet when said antenna is in said folded position.

71. (New) The device of Claim 68 wherein the device body is flexible, and the body is conformable to the sheet.

72. (New) The device of Claim 68 wherein the sheet is generally coplanar with the device body when in the folded position.